

Abstract page:

Title: Evaluation of Prophylactic Anti-Neoplastic Activity of Placental Lysate in Hepatocellular Carcinoma in Experimental Animal Model

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Abstract:

Objectives: Similar to cancer cells, the placenta has immunological and cellular characteristics. This study was conducted to evaluate the prophylactic antineoplastic property of placental lysate in chemical-induced hepatocellular carcinoma in C57BL/6 mice.

Methods: Lysate from a full-term human placenta was prepared following a standard protocol. The total protein concentration of the lysate was assessed. 18 male C57BL/6 mice (3 weeks age, 8-10 g body weight) were used in the experiment and equally divided into 3 groups to receive the following treatments: *Group 1:* 20 µg placental lysate i.p. weekly for 3 consecutive weeks, followed by diethylnitrosamine (DEN) 75 mg/kg i.p. weekly from the 3rd week for 4 consecutive weeks; *Group 2:* Normal saline (positive control) i.p. per mouse weekly for 3 consecutive weeks, followed by injection of DEN 75

mg/kg i.p. weekly from the 3rd week for 4 consecutive weeks; *Group 3*: No intervention (negative control). Changes in body weight and mortality were recorded in all the animals. Histopathological and immunohistochemical examination (alpha fetoprotein expression) of livers were done to check for the development of hepatocellular carcinoma.

Results: There was a significant reduction of body weight in both Group 1 ($p=0.027$) and 2 ($p=0.013$) animals at the time of death than after administration of diethylnitrosamine. Significant improvement in survival was observed in Group 1 animals compared to Group 2 ones ($p=0.043$). However, hepatocellular carcinomas were detected in both Group 1 and 2 animals.

Conclusion: Although prophylactic administration of placental lysate could not prevent hepatocellular carcinoma, it significantly improved survival in comparison to placebo.

Keywords: Placental lysate, hepatocellular carcinoma (HCC), xenogeneic, antineoplastic activity, diethylnitrosamine (DEN).